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Athabasca Oil Sands Development Bitumount, Alberta. January 9, 1974. 1
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ATHABASCA OIL SANDS DEVELOPMENT

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INTRODUCTION

Purpose:

On July 30, 1973, a suggestion was made by the Hon. Allan A. Warrack, Minister of Lands and Forests to the Hon. Horst A. Schmid, Minister of Culture, Youth and Recreation, that the oil extraction plant site at Bitumount be preserved under the Alberta Heritage Act, 1973. The following report provides an evaluation of the Bitumount site in response to this request.

Ownership:

The Bitumount site and buildings were acquired by Royalite Oil Company Limited in 1957. Royalite and three other oil companies were acquired by Gulf Oil Company in 1969, and the property is now administered by Syncrude Canada Ltd.

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RECOMMENDATIONS

Designation:

That the Bitumount site - comprising that area of land legally described as Parcels A and B, Section 1, Township 97, Range 11, west of the 4th Meridian - merits designation as a Classified Heritage Site under the Alberta Heritage Act, 1973.

Preservation of Bitumount:

1. That the Province of Alberta enter into an agreement to jointly preserve and develop the Bitumount site in conjunction with Syncrude Canada Limited.

2. That, if joint participation is not feasible, the Province of Alberta acquire the Bitumount site for preservation and development as a Provincial Heritage Monument.

Future Use of Bitumount:

That the Bitumount site be restored and used to display the various techniques and developments of oil extraction in the Athabasca Oil Sands area during the past century.

SUMMARY EVALUATIONS

Historical and Architectural Importance:

The Bitumount oil extraction plant complex was a pioneer project in the development and improvement of the hot water separation process which has ultimately led to the present exploitation of the Athabasca Oil Sands. Involved with this work were Dr. K. A. Clark, the inventor of the separation process, and R. C. Fitzsimmons, a major exponent of a similar separation system. Both men operated plants at Bitumount prior to 1950.

Suitability for Continued Use:

The primary potential that the Bitumount site provides for continued use is as a focal point for an interpretive program to tell the story of the development of the oil sands as a major petroleum source. Reactivation of the complex for oil extraction purposes seems unlikely since most of the equipment is now out of date or too dilapidated to use.

SITE ENVIRONMENT AND CONTEXT

AREA CONTEXT

The oil extraction plant site at Bitumount is located on the east bank of the Athabasca River, approximately 50 miles north of Ft. McMurray. The nearest year-around community and direct road link to central Alberta is Ft. MacKay, situated about 20 miles south, on the west bank of the river. Consequently, access to the site is primarily by boat. A small, graded airstrip - located southeast of the site - was constructed in the late 1940s to service the new government plant at Bitumount, and is apparently still maintained by the Department of Lands and Forests.

The Bitumount site is also in close proximity to various fur trade posts built along the Athabasca River in the early 19th century, including the Northwest Company post "Pierre au Calumet" and the Hudson's Bay Company post "Beren's House" - located about one mile north of this site.

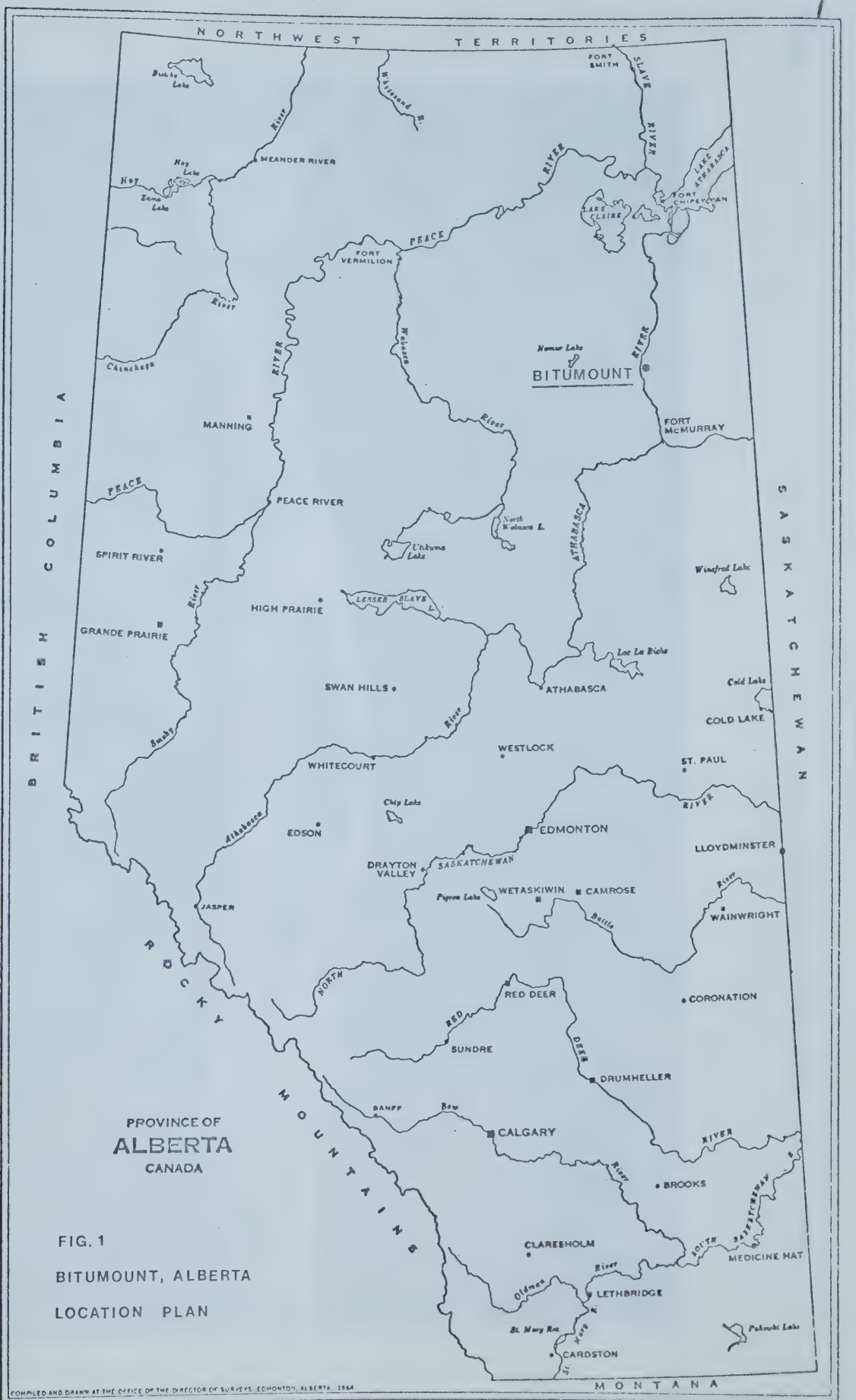

FIG. 1

BITUMOUNT, ALBERTA

LOCATION PLAN

COMPILED AND DRAWN AT THE OFFICE OF THE DIRECTOR OF SURVEYS, EDMONTON, ALBERTA, 1964

Fig. 2. Aerial View of Bitumount in 1962.

IMMEDIATE CONTEXT OF BITUMOUNT

The oil extraction plant at Bitumount consists of a 46 1/2 acre area bordering the east bank of the Athabasca River. Within this boundary are located the remains of various frame and log buildings dating to the 1930's project, and the frame and steel-construction buildings pertaining to the late 1940's and 1950's projects. Adjacent to the latter structures is an area or excavation from which the oil sands were mined; while two wharfs along the river bank mark the mooring facilities for these projects.

Since the abandonment of this site in the late 1950s, small trees and shrubs have gradually encroached on the clearing wherein this site is situated, with the result that today very few of the remaining 64 structures are visible from the river.

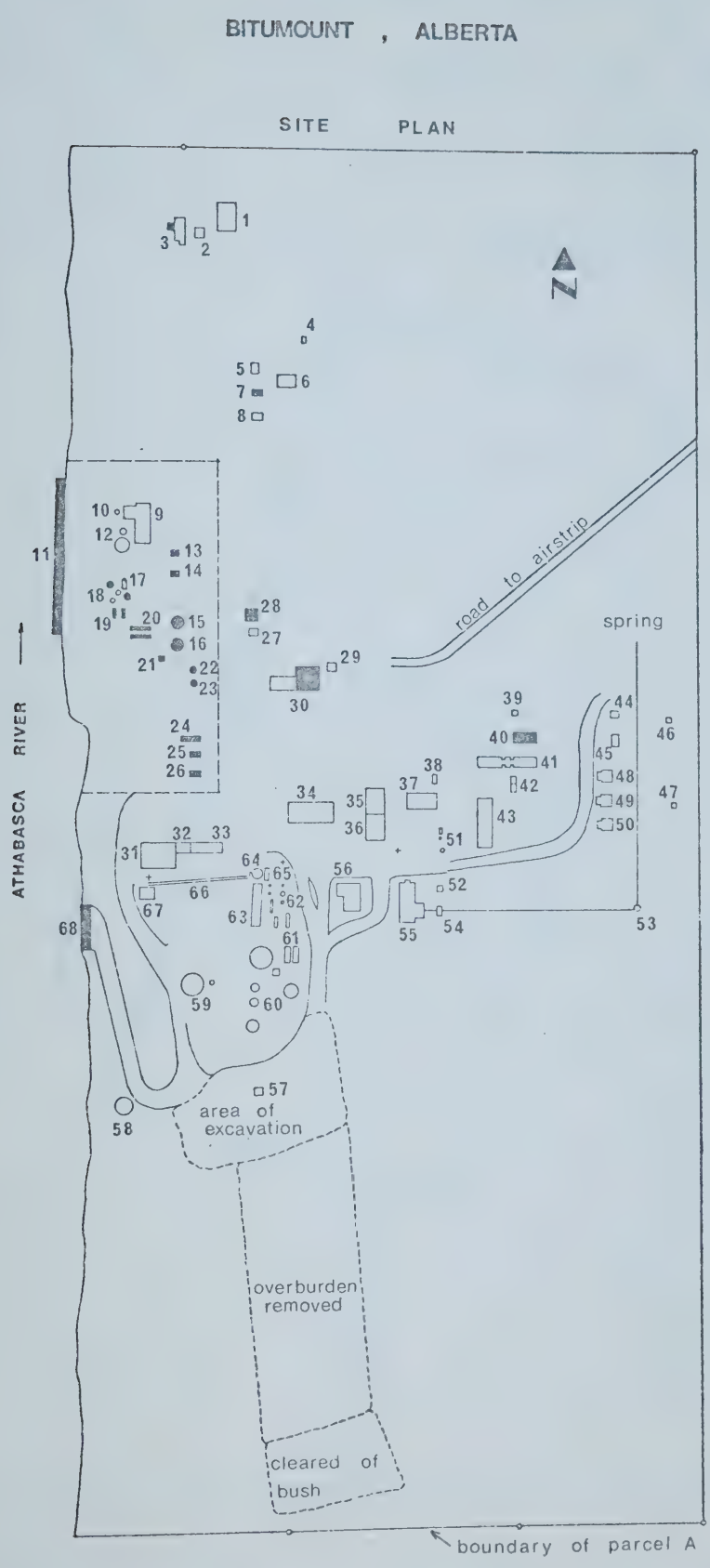

FIG. 3

I.B.C. Plant Operations

1. root cellar
2. ice house
3. house
4. shed
5. cabin
6. storage cabin
7 & 8. cabins
9. extraction plant
10. storage tank
11. wharf
12. tanks
13 & 14. cabins
15 & 16. tanks
17. pipe still
18. fractionating towers
19. pump house
20. tanks
21. shed
22 & 23. tanks
24. house
25 - 27. cabins
28. log building

Alberta Gov't Oil Sands Project

29. planers shed
30. saw mill
31. extraction plant
32. feed
33. storage
34. power house
35. machine shop
36. warehouse
37. garage
38. equipment shed
39. latrine
40 & 41. huts
42. laundry
43. bunk house
44 & 45. cabins
46 & 47. latrines
48 - 50. staff houses
51. tanks
52. shed
53. water tank
54. wood shed
55. cook house
56. lab & office
57. shed
58 - 61. tanks
62. fractionating towers
63. pump house
64. thickener
65. accumulator
66. ramp
67. surge tank
68. wharf
\+ fire hydrants

removed structure

DETAILED
PHYSICAL DESCRIPTION
AND
EVALUATIONS

PHYSICAL DESCRIPTION

1. International Bitumen Company Sites (1930s):

About half of the buildings constructed by this company are still standing, with the majority located northeast of the old separation plant. These single-storey buildings are of frame or log construction, are located on several different levels along the slope and ridge of the river bank, and can be reached by use of a makeshift asphalt roadway.

The oil extraction complex includes a split-level separation plant of frame construction, three vertical steel tanks, a brick pipe still, two steel fractionating towers, and the remnants of an old log wharf.

2. Alberta Government Oil Sands Project (1940s):

All but six of the 55 structures erected by the provincial government still stand at the Bitumount site, just south of the 1930's project complex. The various oil tanks and actual plant buildings are made of steel, while staff cabins, garage and lab facilities, as well as the sawmill are of frame construction. The latter structures were all painted a light brown with white trim around the doors and windows. An above-ground, hot water heating system provided heat for all major buildings in this complex. Access to the new wharf was via a paved road which connected to all major centers of activity within this project. In addition, a graded road was built from the sawmill building to the airstrip located southeast of the site.

EVALUATION: HERITAGE SIGNIFICANCE

EVALUATION

Heritage Significance:

1. Broad Cultural, Social and Economic Values:

The Bitumount oil extraction plant site experienced various pioneer activities which have eventually resulted in the present full scale exploitation of the Athabasca Oil Sands. Attempts to obtain the crude oil by drilling were made at Bitumount in the 1920s, followed by the establishment of an oil extraction plant by the International Bitumen Company on the site in 1930. A new, and more complex separation plant was constructed adjacent to the I.B.C. operations in 1948, and operated under several different owners until 1958.

Both of the oil separation plants proved the economic viability of oil extraction from the tar sands by the hot water separation process - a technique used in the last few decades by CanAmera Oil Sands Development Limited and Royalite Oil Company Limited at Bitumount, and by Great Canadian Oil Sands Limited near Ft. McMurray. Consequently, the pioneer experiments and processes developed and perfected at Bitumount have served as significant milestones in the economic development of the Athabasca Oil Sands region.

2. Association with Important Persons:

Robert C. Fitzsimmons was the key person in the initial development of Bitumount, and claims to have selected the site name in 1933. He was born in Alberton, PEI, in 1881, and came to the west in 1903. In 1922 he first visited the Athabasca Oil sands Area, and the following year bought out the Alcan Oil Company's exploration rights to the Bitumount region. Fitzsimmons initially attempted to obtain crude oil by drilling, but discarded this technique in 1930 to construct an oil extraction plant based upon a model he had developed on the site in 1925. As president of the International Bitumen Company (formed 1927), Fitzsimmons expanded his Bitumount project into a substantial industrial complex for that part of the province. Improvements to the hot water separation process of oil separation were continually made, and the site was eventually expanded in 1936 to include a small oil refinery.

Due to a variety of reasons, he was unable to market his products and was forced to sell his company in 1943 to L. R. Champion, who renamed it Oil Sands Limited. This company eventually forfeited the site to the Provincial Government during construction of the new extraction plant in the late 1940s, which later sold it to several major oil companies. Robert C. Fitzsimmons died in Edmonton in 1971, without recognition or recompense for his contribution to the development of the oil sands of Alberta.

Karl A. Clark, a native of Georgetown, Ontario, is generally acknowledged to be the inventor of the hot water separation process which has been in use on the Athabasca Oil Sands since the 1930s. Born in 1888, Dr. Clark came to Alberta in 1920 to join the Research Council of Alberta as an engineer. He first successfully separated oil from the tar sands in 1923 at a small plant built on the University of Alberta campus, and the next year established a plant at the Dunvegan Railway yards in northeast Edmonton. In the 1930s he joined the faculty of the University, but returned to the Research Council from 1943-47, after which time he was appointed head of the University's Mining and Metallurgy Department. He retired in 1954 and died in Victoria, B.C., in 1966.

Dr. Clark was instrumental in developing the design of the Alberta Government Oil Sands Project plant at Bitumount in the late 1940s, and in designing the plant facilities for the Great Canadian Oil Sands Company complex near Ft. McMurray in the 1960s.

3. Association with Important Events:

Invention and Development of Oil Sands Separation Process:

The invention of the hot water oil separation process was the single key factor in enabling the full scale exploitation of the Athabasca Oil Sands to take place, and led to a major development of this portion of the province in the 1960s. This invention has been attributed to Dr. K. A. Clark for his work with the Alberta Research Council in 1923; while R. C. Fitzsimmons claims to have independently invented a similar process at Bitumount in 1925.

Later improvements to the process were made at the Alberta Government Oil Sands Project plant, where, in 1956 CanAmera Oil Sands Development Limited replaced Clark's original separation process with the Coulson Method Separators. The knowledge obtained from the pioneer efforts at Bitumount eventually became instrumental in the creation of the Great Canadian Oil Sands plants near Ft. McMurray, which finally initiated the full scale exploitation and development which that region now enjoys.

4. Important Structural or Architectural Information:

The Bitumount site maintains important examples of various buildings associated with the different phases of oil sands development, depicting the expansion and modernization of this industry from the late 1920s to the mid 1950s. In addition a substantial quantity of the original equipment used to operate these plants still exists on site, and provides a good insight into the mechanical and technological improvements made during this 30-year period.

5. Architectural Significance: Not Applicable.

6. Contains Important Scientific Information:

The old separation plant of the 1930's era still contains a substantial portion of the equipment originally used in the oil separation process, and as such is a unique feature in the province. It provides an insight into the early scientific developments of this industry and the equipment used to achieve the success of the period.

Similarly, the plant of the late 1940's project provides information concerning the latest scientific methods employed in the oil extraction industry during the 1950s.

Fig. 5. Aerial View of Bitumount in 1927

Fig. 6. First camp at Bitumount set up by Fitzsimmons in 1925.

Fig. 7. Early oil drilling operations at Bitumount, circa. 1927.

Fig. 8. First oil extraction process to be established at Bitumount in 1925.

Fig. 9. Construction of I. B. C. oil extraction plant in 1930.

Fig. 10. Shipping crude oil from the Bitumount site in the 1930s.

Fig. 11. Shipping crude oil from Clearwater to Edmonton in the 1930s.

Fig. 12. I.B.C. Separation plant enlarged in 1936 to include a small oil refinery.

Fig. 13. Aerial view of new Alberta Government Oil Sands Project Complex at Bitumount in 1950.

Fig. 14. Robert C. Fitzsimmons, at Bitumount in 1930s.

Fig. 15. Karl A. Clark, circa 1950.

EVALUATION: CONDITION

EVALUATION

Condition (Buildings):

1. Structural Soundness:

All metal buildings of the government plant project at Bitumount are still structurally sound, as are most of the wood frame structures belonging to the older I. B. C. operations. Frame buildings of the more modern project and the extraction plant of the older one are, however, in poor condition. The various steel tanks used for oil storage appear to be in good repair.

2. Originality:

Modifications were made to the old I. B. C. plant in the mid 1930s, however, no subsequent changes are apparent. Certain limited alterations have been made to one of the houses of this complex in recent years to accommodate the present occupant. In the government project, the oil separation system of the extraction plant was removed in the mid 1950s and replaced by a new system, which appears to be relatively in tact. However, certain parts of machinery have been removed from the later project for use at other plant sites in the oil sands area. Consequently, the pump house is void of all its mechanisms and installations.

3. Finish and Detail:

All of the steel construction buildings remain in basically the same condition as they were when last used in the 1950s. On the other hand, the wood-frame buildings have all experienced extensive water damage, resulting in the collapse of plaster walls and ceilings, as well as the rotting of wood and peeling of paint. In addition, most doors and windows have been broken, and numerous electrical fixtures have been removed.

4. Mechanical Systems:

Within the 1930's project of the International Bitumen Company, no mechanical systems were in use except within the separation plant complex. These are no longer functional due to deterioration and salvage of various pieces during the past 30 years.

The mechanical systems of the 1940's project is in better physical repair, but also lacks various motors and other items. Consequently, the entire system is non-operational at this time.

Condition (Site):

1. Disturbance:

a. Extent: Disturbance on this site is limited primarily to the encroachment of vegetation as a result of the site's abandonment 15 years ago. In addition, the wharfs and roads have suffered from weathering; while part of the old I. B. C. operations have been covered by the waste material produced by the operation of the government plant in the 1950s.

b. Degree: The new vegetation growth covering the Bitumount site has been so great over the past 15 years that almost the entire complex is now hidden in the dense growth. The two wharfs, moreover, have all but disappeared as a result of constant erosive action by the Athabasca River. The waste material from the government project has covered about one third of the old plant site complex up to a depth of approximately 30 feet. Original structural remains, however, may still be found beneath this deposit.

2. Originality:

Primarily, the Bitumount site has not changed significantly since it closed in 1958, and the new vegetation growth can readily be removed to restore the site's original character. Hence, the site has maintained most of its original appearance and topography, while the surrounding forested region remains identical to the conditions of the 1920s.

Fig. 16. View of I. B. C. extraction plant in Aug, 1973.

Fig. 17. View of pulley system at I. B. C. extraction plant in August, 1973.

Fig. 18. View of boilers and part of I. B. C. extraction plant in August, 1973.

Fig. 19. View of Government Extraction Plant in August, 1973.

EVALUATION: POTENTIAL FOR DEVELOPMENT

EVALUATION

Potential for Development:

1. Heritage Interpretation:

Two main facts make the Bitumount site unique in the history of oil sand development in Alberta:

- -the presence of four different phases of oil sand development on this site, and
- -the existence of a substantial portion of the original structures and equipment associated with these phases.

The four phases (early drilling operations, individual private oil extraction ventures, direct government involvement, and major oil company investment) also make the Bitumount site representative of the total oil sands exploitation process, since each phase occurred independently at various sites from Ft. McMurray to Bitumount.

In addition, extensive documentation is available at the Provincial Archives of Alberta and at the Alberta Research Council which further provides the necessary background and technical data for the various projects undertaken at Bitumount. Consequently, this site provides an ideal setting for an on-site interpretive program of the Athabasca oil sands.

2. Accessibility and Vulnerability:

Access to the Bitumount site is extremely limited at present, since the road ceases at Ft. MacKay, about 10 to 15 miles south of the site on the opposite shore of the Athabasca River. Hence, the site can only be reached by small craft on the river, or by use of light aircraft, which can land at the Bitumount airstrip.

Due to its remote location, the Bitumount site has been susceptible to a certain amount of vandalism in the past, and remains vulnerable to such activity despite the on-site residence of an unofficial watchman. In addition, the large number of wooden buildings are readily susceptible to destruction by fire.

3. Functional Adaptibility:

Although this site is virtually limited for use as an oil sands interpretive museum complex, the site can also serve as a local administrative center for other heritage sites in the area. As such it could serve as the base for possible archaeological work on the two fur trade posts: Pierre au Calumet and Beren's House, and later serve as the administrative headquarters for these nearby sites. In addition some of the area around the Bitumount site could be developed into a Provincial Park with accompanying camping facilities.

4. Social and Economic Benefits:

The development of the Athabasca oil sands area has, until now, been largely concerned with the economics of oil exploitation. However, by preserving and eventually developing the Bitumount site, a cultural aspect is brought into the area, namely tourism and recreation. This site could, when developed, be instrumental in providing an educational and recreational diversion for both local inhabitants of the region and for visiting tourists. Moreover, the development of this site could assist in increasing the tourism potential and subsequent revenue for the general area.

5. Aesthetic Factors:

None.

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4. Acknowledgments:

Assistance from the Department of Lands and Forests by providing a boat and guide to inspect the Bitumount site during August, 1973, is greatly appreciated.